



Australian Government

MSTGN5009 Develop and test TCF products or processes

Release: 1

MSTGN5009 Develop and test TCF products or processes

Modification History

Release 1. Supersedes and is equivalent to LMTGN5011A Develop and test textile, clothing and footwear products or processes

Application

This unit of competency covers the skills and knowledge required to develop and test a textiles, clothing and footwear (TCF) product or process to achieve required specifications.

The unit of competency applies to the development of a new product or production process or the significant modification of an established product or process to meet design and quality specifications. Routine or non-routine testing procedures must be implemented to test that the development achieves specifications. This unit of competency may involve the development and testing of a prototype or sample product or the design of a manufacturing process or production equipment.

This unit of competency is applicable to all sectors of the TCF industry.

Work may be conducted in small to large scale enterprises and may involve individual and team activities.

No licensing, legislative or certification requirements apply to this unit at the time of publication

Pre-requisite Unit

MSTTX4003 Perform routine textile testing and analyse results

Competency Field

Generic

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | | | |
|---|----------------------|-----|---|
| 1 | Determine job | 1.1 | Follow standard operating procedures (SOPs) |
|---|----------------------|-----|---|

	requirements	1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, drawings, job sheets or work instructions
2	Interpret development specifications	2.1	Interpret development need and parameters
		2.2	Obtain and interpret design and quality specifications appropriate to the TCF product or process from data sheets, production schedules process specifications or the client
		2.3	Interpret specifications applying to TCF materials or TCF production processes
		2.4	Interpret, use and apply TCF industry terminology relating to raw materials and processing
		2.5	Use information resources to clarify specifications, as required
3	Develop TCF product or process design	3.1	Conduct research to identify development options and examine relevance for specific TCF application
		3.2	Develop preliminary design to explore options with key personnel
		3.3	Apply feedback to reassess ideas and produce detailed design concept according to required specifications
		3.4	Clarify details of design concept
4	Test product or process design concept	4.1	Determine appropriate processes to test the design concept in a TCF context, including testing of materials, processes and specifications
		4.2	Undertake and document calculations to determine test time, volume and temperatures
		4.3	Develop test procedures and specifications

		4.4	Select and prepare test equipment, tools and materials and work area according to test specifications
		4.5	Undertake test according to test procedures and WHS practices
5	Interpret and document test results and confirm design	5.1	Document, check and validate test results in accordance with test specifications
		5.2	Discuss test results with key personnel, examine new information and assess implications for identified product or process
		5.3	Use information from development and testing of TCF product or process to modify and improve design specifications
		5.4	Use test results to adjust manufacturing process or identify suitable TCF materials
		5.5	Document improved design and specifications

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Workplace procedures include one or more of the following:

- requirements prescribed by legislation, awards, agreements and conditions of employment
- SOPs
- work instructions
- oral, written and visual communication
- quality practices, including responsibility for maintenance of own work quality and contribution to quality improvement of team or section output

	• housekeeping • tasks related to environmental protection, waste disposal, pollution control and recycling • WHS practices
Australian Standards include:	• the relevant industry or Australian Standards that are current at the time this unit is being undertaken
Parameters include, but are not limited to, the following:	• cost • timing • location • material use • product function • product performance • special features
Clarify details of design concept includes, but is not limited to, the following:	• specify and document materials, processes, equipment and other required elements in design • undertake and verify calculations • conduct risk analysis to identify possible problems and develop contingency plans • identify issues to assess feasibility of design and note for testing • identify strengths and weaknesses of design and note for testing
Undertake test procedures includes, but is not limited to, the following:	• monitor test process to ensure compliance to test specifications • document all deviations from test procedures and identify cause • clean and restore test equipment, tools and materials
Calculations include, but are not limited to, one or more of the following:	• percentages • volumes • mass
Key personnel include, but are not limited to, one or more of the following:	• supervisors • team leaders • trainers

- engineers
- textile mechanics
- production personnel
- design personnel
- quality personnel
- sales and marketing personnel

Appropriate processes include, but are not limited to, one or more of the following:

- development of a prototype
- development of a sample
- demonstration
- routine tests
- non-routine tests

WHS practices

WHS practices include hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and include one or more of the following:

- manual handling techniques
- SOPs
- PPE
- safe materials handling
- taking of rest breaks
- ergonomic arrangement of workplaces
- following marked walkways
- safe storage of equipment
- housekeeping
- reporting accidents and incidents
- environmental practices

Unit Mapping Information

Release 1. Supersedes and is equivalent to LMTGN5011A Develop and test textile, clothing and footwear products or processes

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a203ec5c-de7d-406b-b3e1-8f1a9b76e92e>

Assessment Requirements for MSTGN5009 Develop and test TCF products or processes

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include:

- reading and following work instructions, standard operating procedures (SOPs), safe work practices
- applying relevant standards
- interpreting design and quality specifications appropriate to at least one (1) TCF product or process from data sheets, production schedules process specifications or the client
- conducting research to identify development options, examining relevance for specific TCF application and developing preliminary design to explore options with key personnel
- developing test procedures and specifications and undertaking test according to test procedures and work health and safety (WHS) practices
- using information from development and testing of TCF product or process to modify and improve design specifications and adjust manufacturing process or identify suitable TCF materials
- documenting improved design and specifications.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- relevant Australian Standards
- textile industry terminology
- international and Australian specification Standards
- TCF production processes, such as:
 - design
 - weaving
 - knitting
 - washing
 - bleaching
 - dyeing
 - tufting
 - assembly

- finishing
- printing
- TCF materials
 - fibres
 - yarns
 - fabrics
 - dyes and chemicals
 - leather
 - technical textiles
- TCF products
- systems and formula used in textile calculations
- routine and non-routine TCF tests
- TCF test equipment and tools
- test materials
- quality practices
- workplace procedures
- practices for recording and reporting
- WHS practices and procedures.

Assessment Conditions

- Assessors must:
 - satisfy the assessor competency requirements that are in place at the time of the assessment, as set by the VET regulator
 - have vocational competency in developing and testing textile, clothing and footwear products or processes, at least to the level being assessed, with relevant industry knowledge and experience.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The unit is applicable to all TCF sectors and assessment must ensure it is delivered to suit the industry it is being applied to.

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